Evning.
D: 15/05/2014.

Student Exam No._____

GANPAT UNIVERSITY

B. Tech. Semester: VIII Civil Engineering

Regular Examination May – June 2014(CBCS)

2CI-802 Construction Management

Time: 3 Hours **Total Marks: 70**

Instruction:

1. **Attempt all question.**
2. **Make suitable assumption wherever necessary.**
3. **Figures to the right indicate full marks.**

Section - I

Que. – 1 (a) What is project management? State importance of project management. **4**

(b) Prepare a bar chart for construction of RCC column beam frame for industrial structure starting from plinth level up to striping of framework of beam. **6**

Activity	Duration
A. Column reinforcement cutting & bending	2
B. Placing of reinforcement of column	3
C. Formwork of column	2
D. Concreting of column	3
E. Striping of column formwork	1
F. Beam formwork placing	3
G. Beam reinforcement cutting & bending	3
H. Beam reinforcement placing	3
I. Casting of Beam	1
J. Removal of formwork of beam side	1

(c) Define with example: Event and Activity **2**

OR

Que. – 1 (a) Explain the six major functions of construction management. **4**

(b) Write short note on Work Breakdown Structure. **4**

(c) Explain types of Events with examples. **4**

Que. – 2 (a) **Define following terms:-** **5**

(i) Optimistic time (ii) Pessimistic time (iii) Most likely time

(iv) Earliest expected time (v) Slack

(b) Following activities are observed in a project. Prepare network diagram and find out (1) Critical path (2) Critical activities (3) Project duration and (4) prepare schedule for network including activity times and floats. 6

Activity	Sequence Code	Duration (in days)
A	1 - 2	4
B	1 - 3	5
C	2 - 4	3
D	2 - 5	5
E	3 - 5	3
F	4 - 5	0
G	4 - 6	6
H	5 - 6	5

OR

Que. – 2 (a) Following activities are observed in a project. Prepare network diagram and find out (1) Critical path (2) Critical activities (3) Project duration and (4) prepare schedule for network including activity times and floats. 6

Activity	Preceding Activity	Following activity	Duration (days)
A	-	B,C	10
B	A	D,F	2
C	A	E	8
D	B	E	0
E	C,D	G	18
F	B	H	8
G	E	I	12
H	F	I	4
I	H,G	-	1

(b) Explain Fulkerson's rules for numbering the events. 5

Que. – 3 (a) Write short note on ABC analysis. 4

(b) Prepare job layout for a multistory building. 4

(c) Enlist participants involved in construction project and State their roles in project. 4

Section - II

Que. – 4 (a) Write short note on Cash Flow Analysis and use of 'S' Curve. **4**

(b) From the following data for a power shovel, find out hourly rental cost for hiring it out to others: **5**

Prime Cost..... = Rs. 13,50,000/-
Estimated useful life..... = 5 years
Salvage Value..... = 10% of Prime cost
Investment Cost..... = 16% of average value
Maintenance & Repair cost = 32% of annual depreciation
Annual overhead..... = Rs. 11,500/-
No. of hours per day..... = 16 hours
Operating factor..... = 0.65
Daily operating cost..... = Rs. 2250/-
Expected Profit..... = 10% of Owning and operating cost. Use straight line method of depreciation.

(c) Write short note on Resources Allocation. **3**

OR

Que. – 4 (a) The original cost of a roller is Rs. 9, 50,000/- and its salvage value is 10% of its original cost. The roller is used for 1400 hours per year and its life Is 6 years. The hiring charges for the same type of roller including maintenance and repair is Rs. 30500/- per month. Suggest whether the roller should be purchased or hired. **5**

(b) Explain stages of material management. **4**

(c) Define following terms:- **3**
(i) Mean (ii) Variance (iii) Standard deviation.

Que. – 5 (a) Following Activities are observed in a project. Prepare network diagram and find out (1) Critical path and its standard deviation (2) Probability of completion of project in 15 days (3) Time duration that will provide 90% probability of its completion in time (4) Prepare schedule for PERT. **6**

Activity	Sequence Code	Duration (in days)		
		T_o	T_m	T_p
A	1 - 2	2	4	8
B	1 - 3	5	5	7
C	2 - 4	2	3	3
D	2 - 5	4	5	6
E	3 - 5	1	3	4
F	4 - 5	0	0	0
G	4 - 6	4	6	9
H	5 - 6	4	5	8

(b) A construction equipment was purchased in Rs. 19000/-. Assuming its salvage value at the end of 5 years to be Rs. 1900/-, determine the amount of depreciation for each year by sinking fund method considering rate of interest at 4.50 % per annum. **5**

OR

Que. – 5 (a) Following Table gives data for the duration and costs of each activity of the project. The indirect cost of the project is 2500/- per week. Determine the optimum duration of the project and the corresponding minimum cost. Draw time scaled network and cost-duration curve for the project. **6**

Activity	Sequence Code	Normal Duration (weeks)	Normal Cost (Rs.)	Crash Duration (weeks)	Crash Cost (Rs.)
P	1-2	6	6000	2	13500
Q	1-3	8	4500	5	8000
R	2-3	3	5000	1	9200
S	2-4	5	7000	3	14500
T	3-4	5	5500	2	12000

(b) Explain factors affecting selection of equipments. **5**

Que. – 6 (a) Prepare week wise Labour schedule and Equipment Schedule for a small project. **4**

(b) Write short note on Appraisal of Project. **4**

(c) Compare standard equipments and special equipments.

END OF PAPER